CLAIMS

Applicants offer the following amendments in an effort to place the Claims in better condition for appeal. Please amend the Claims as follows:

1. (Previously Presented) A computing system, comprising:

a plurality of memory regions each having a different address range and a corresponding class identifier;

a range register coupled to receive an address and configured to produce: (i) the class identifier corresponding to the memory region having an address range that includes the received address, or (ii) a default class identifier in the event that none of the memory regions has an address range that includes the received address;

a cache comprising a plurality of sets;

a replacement management table (RMT) having a plurality of entries, wherein each of the entries corresponds to one of the class identifiers and to one of the sets of the cache, and wherein the entries of the RMT are configured to store data that define the sets of the cache that may be used to store data retrieved from each of the memory regions, and wherein the RMT is coupled to receive the class identifier produced by the range register and configured to produce a tag replacement control indicia dependent on the received class identifier, and wherein the tag replacement control indicia is indicative of the sets of the cache that may be used to store data retrieved from one of the memory regions having the received class identifier; and

wherein the cache is coupled to receive data retrieved from one of the memory regions and the tag replacement control indicia, and configured to store the received data in one of the sets of the cache dependent upon the tag replacement control indicia.

2. (Previously Presented) The computing system of Claim 1, wherein the class identifiers are created by software, and wherein the class identifier creation software comprises compiler or operating system software.

3. (Previously Presented) The computing system of Claim 1, wherein a set of the cache is replaced based upon a least recently used function.

4. (Previously Presented) The computing system of Claim 1, wherein the replacement management table uses software.

5. (Previously Presented) The computing system of Claim 4, wherein class identifier creation software is employable to classify an address range as a default address range.

6. (Previously Presented) The computing system of Claim 1, wherein the cache comprises a translation lookaside buffer.

7. (Previously Presented) The computing system of Claim 4, wherein class identifier generation software further comprises a direct memory access command.

8. (Currently Amended) A method of configuring replacement eligibility of at least one set in a cache comprising a plurality of sets, the method comprising:

creating a class identifier for each of a plurality of memory regions having a different address range by class identifier creation software;

receiving an address;

using the address to produce: (i) the class identifier corresponding to the memory region having an address range that includes the received address, or (ii) a default class identifier in the event that none of the memory regions has an address range that includes the received address;

using the produced class identifier to create a tag replacement control indicia through employment of a replacement management table, wherein the tag replacement control indicia is indicative of the sets of the cache that may be used to store data retrieved from one of the memory regions having the produced class identifier; and

configuring the replacement eligibility of the at least one set in the cache as a function of the tag replacement control indicia.

9. (Previously Presented) The method of Claim 8, wherein the step of using the produced class identifier to create a tag replacement control indicia further comprises employing a software-managed replacement management table.

10. (Previously Presented) The method of Claim 8, further comprising replacing data within the at least one set of the cache as a function of the tag replacement control indicia.

11. (Cancelled.)

12. (Previously Presented) The method of Claim 8, further comprising discarding the tag replacement control indicia in the event data corresponding to the received address resides in the cache.

13. (Previously Presented) The method of Claim 8, further comprising the step of using the received address to retrieve corresponding data.

14. (Previously Presented) The method of Claim 10, wherein the replacing is carried out using a least recently used function.

15. (Cancelled.)

16. (Previously Presented) The method of Claim 10, wherein the replacing comprises:

    using an algorithm bit to select a replacement algorithm; and

    using the replacement algorithm to replace data within the at least one set of the cache dependent upon the tag replacement control indicia.

17. (Cancelled.)

18. (Previously Presented) A computer program product for configuring replacement eligibility of at least one set in a cache comprising a plurality of sets, the computer program product having a medium with a computer program embodied thereon, the computer program comprising:

computer code for creating a class identifier for each of a plurality of memory regions, wherein each of the memory regions has a different address range;

computer code for using a received address to produce: (i) the class identifier corresponding to the memory region having an address range that includes the received address, or (ii) a default class identifier in the event that none of the memory regions has an address range that includes the received address;

computer code for using the produced class identifier to create a tag replacement control indicia through employment of a replacement management table, wherein the tag replacement control indicia is indicative of the sets of the cache that may be used to store data retrieved from one of the memory regions having the produced class identifier; and

computer code for configuring the replacement eligibility of the at least one set in the cache as a function of the tag replacement control indicia.

19. (Previously Presented) The computer program product of Claim 18, further comprising computer code for replacing data within one of the sets of the cache as a function of the tag replacement control indicia.

20. (Cancelled.)

21. (Previously Presented) A processor comprising:

a plurality of memory regions each having a different address range;

a cache comprising a plurality of sets;

computer code for creating a class identifier for each of the memory regions;

computer code for using a received address to produce: (i) the class identifier corresponding

to the memory region having an address range that includes the received address, or

(ii) a default class identifier in the event that none of the memory regions has an

address range that includes the received address;

computer code for using the produced class identifier to create a tag replacement control

indicia through employment of a replacement management table, wherein the tag

replacement control indicia is indicative of the sets of the cache that may be used to

store data retrieved from one of the memory regions having the produced class

identifier; and

computer code for configuring the replacement eligibility of the at least one set in the cache

as a function of the tag replacement control indicia.

22. (Previously Presented) The computing system of claim 1, wherein the RMT is configured to

store a plurality of bypass bits each corresponding to a different one of the class identifiers, and

wherein each of the bypass bits is indicative of whether data retrieved from one of the memory

regions having the corresponding class identifier is to be stored in the cache, and wherein the tag

replacement control indicia produced by the RMT is indicative of the bypass bit corresponding to

the class identifier produced by the range register.

23. (Previously Presented) The computing system of claim 1, wherein the RMT is configured to store a plurality of algorithm bits each corresponding to a different one of the class identifiers, and wherein each of the algorithm bits specifies a replacement algorithm to be used to replace data in the cache for the corresponding class identifier, and wherein the tag replacement control indicia produced by the RMT is indicative of the algorithm bit corresponding to the class identifier produced by the range register.